

I claim:

1. A wireless, multi-modal access device adapted to communicate over a plurality of communication networks operating in differing communication modes to facilitate transfer of a communication link during a communication session to promote efficient use of the communication networks, comprising
  - a. a radio transceiver capable of operating simultaneously over at least two communication channels to allow a communication session to be established on one said channel by adopting a communication mode compatible with one of the plurality of communication networks to provide a communication link over said one channel using a communication mode compatible with said one communication network and capable of simultaneously wirelessly communicating over a second said channel with another communication network using a communication mode compatible with said second communication network, and
  - b. an access device controller connected with said radio transceiver for causing the communication link established between said access device and said one communication network to be transferred to said second communication network during the communication session to allow the communication session to be continued over said second communication network.
2. A communication system for integrating a plurality of wireless communication networks capable of independent operation to form an integrated communication grid, comprising
  - a. a plurality of wireless communication networks providing service to users in overlapping geographic areas, said wireless communication networks using different communication modes,
  - b. a plurality of portable wireless, multi-modal access devices, each said access device being capable of operating in at least some of the plurality of communication modes compatible with said communication networks and being capable of establishing a communication session over a first

communication link using any one of said communication networks while operating in a compatible communication mode, and

- c. a system controller for communicating with any said access device during a communication session established over a communication link using one of said communication networks to cause the communication link to be transferred to a second one of said wireless communication networks having a geographic service area encompassing said access device by causing said access device to switch to a different communication mode compatible with said second communication network during the communication session to allow the communication session to continue over said second communication network.

- 3. An omni-compatible broadband connection gateway for providing wireless access to a plurality of communication services for a plurality of portable wireless access devices located within a geographic service area of the gateway and capable of operating in a plurality of different communication modes, comprising

- a. a frequency agile and protocol agile radio transceiver capable of simultaneous wireless communication with a plurality of portable wireless access devices within the geographic service area of the gateway over a plurality of re-assignable communication channels adapted to be assigned to those portable wireless access devices to which a communication service is supplied using a frequency and communication protocol compatible with the requirements of the portable wireless access device and compatible with the communication service being supplied,
- b. an interface circuit for providing a broad band communication channel between said radio transceiver and all communication services being provided by the gateway to the portable wireless access devices operating within the geographic service area of the gateway, and
- c. a transceiver controller connected with said radio transceiver for causing said radio transceiver to assign an appropriate communication channel to each portable wireless access device to which a communication service is to be provided wherein the communication channel is selected by said controller to

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be compatible with the requirements of the communication service and the corresponding portable wireless access device and for causing said radio transceiver to employ a communication protocol and to employ an appropriate frequency for wireless broadcast over each communication channel to allow all of the communication services to be supplied to the portable wireless access devices to be operated simultaneously.

4. An omni-compatible broadband connection gateway as defined in claim 3, further comprising a memory for storing a plurality of data sets allowing said radio transceiver to implement those communication protocols appropriate for supplying the respective communication services accessible by said interface circuit for wireless broadcast over the respectively assigned communication channels,
5. A transferrable portable wireless access device for providing access to a wireless service supplied by a wireless service provider upon supply of a user identification signal by which the wireless service provider is able to authenticate a user entitled to services to which charges may be posted for services provided to the portable access device without requiring prior association of the user with the access device in the business records of the service provider, comprising
  - a. a transceiver for wirelessly accessing a wireless service using a frequency and communication protocol appropriate for such wireless service and for broadcasting a user identification signal required for posting charges for services provided to the access device by the wireless service provider without requiring prior association of the user with the access device in the business records of the service provider,
  - b. a user identifying circuit for receiving user supplied identifiers for generating the user identification signal supplied to said transceiver, said user identifying circuit including
    - i) a passive identifier sensor for sensing a unique characteristic of the user determined by the user's DNA, and
    - ii) an active identifier sensor for receiving a user generated signal resulting from a willful action of the user.

6. A multi-channel gateway for providing wireless access to a plurality of communication services for a plurality of portable wireless access devices located within a geographic service area of the gateway, comprising
- a. a multi-channel radio transceiver capable of simultaneous wireless communication with a plurality of portable wireless access devices within the geographic service area of the gateway over a plurality of re-assignable communication channels adapted to be assigned to those portable wireless access devices to which a communication service is supplied using a frequency and communication protocol compatible with the requirements of the portable wireless access device and compatible with the communication service being supplied,
  - b. an interface circuit for providing a service side communication channel between said radio transceiver and all communication services being provided by the gateway to the portable wireless access devices operating within the geographic service area of the gateway,
  - c. a memory for storing a plurality of communication protocols appropriate for supplying the respective communication services accessible by said interface circuit for wireless broadcast over the respectively assigned communication channels, and
  - d. a transceiver controller connected with said radio transceiver for causing said radio transceiver to assign an appropriate communication channel to each portable wireless access device to which a communication service is to be provided wherein the communication channel is selected by said controller to be compatible with the requirements of the communication service and the corresponding portable wireless access device and for causing said radio transceiver to employ a communication protocol stored in said memory and to employ an appropriate frequency for wireless broadcast over each communication channel to allow all of the communication services to be supplied to the portable wireless access devices to operated simultaneously.

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